REMARKS

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gu et al. (US 6,359,672) in view of Jones et al. (US 6,417,899), claims 5-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paukshto et al. (US 2004/0085496) in view of Makino (US 6,259,505), claims 12 and 14-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paukshto et al. in view of Jones et al., and claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Paukshto et al. in view of Trapani et al. (US 2003/0002154). Applicants respectfully traverse these rejections for the following reasons.

With regard to claims 1-4 being rejected under 35 U.S.C. § 103(a) as being unpatentable over Gu et al. (US 6,359,672) in view of Jones et al. (US 6,417,899), Applicants respectfully traverse this rejection for the following reasons.

Applicants respectfully assert that Gu et al. is related to an X-ray imaging device and Jones et al. is related to a fabricating method of a polarizer. However, Applicants respectfully assert that combining the teachings of Jones et al. with the teachings of Gu et al. would result in formation of a polarizer below the x-ray layer of Gu et al., thereby rendering the device of Gu et al. inoperable for its intended usage. Thus, as MPEP 2143.01 instructs, "[I]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." Furthermore, MPEP 2143.01 instructs, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810,

123 USPQ 349 (CCPA 1959)." Accordingly, because modifying Gu et al. with the teachings of Jones et al. would fail to provide for improved contrast ratios, which would render the x-ray imaging device of Gu et al. inoperable and unsatisfactory for it intended purpose, Applicants respectfully assert that the Office Action has not established any proper motivation to modify Gu et al., and thus not established a *prima facie* case of obviousness.

For at least the above reasons, Applicants respectfully assert that Gu et al. and Jones et al. fail to establish a *prima facie* case of obviousness with regard to amended independent claims 1 and 3, and hence dependent claims 2 and 4. Thus, Applicants respectfully request that the rejection of claims 1-4 under 35 U.S.C. § 103(a) as being unpatentable over Gu et al. in view of Jones et al. be withdrawn.

Claims 5-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paukshto et al. (US 2004/0085496) in view of Makino (US 6,259,505). Applicants respectfully traverse this rejection for the following reasons.

Independent claim 5 recites a liquid crystal display device including, in part, "a polarizing film formed on the color filter layer," and independent claim 8 recites a method of fabricating a liquid crystal display device including, in part, "forming a polarizing film on an upper surface of the color filter layer."

Applicants respectfully assert that Paukshto et al. discloses, see paragraph [0105], an optically anisotropic thin crystalline film (TCF) 606, and not a polarizer. Specifically, Paukshto et al. discloses polarizing films 601 and 610. Accordingly, Applicants respectfully assert that Paukshto et al. is even more deficient that admitted to by the Office Action, and that Makino fails to remedy the deficiencies of Paukshto et al. Thus, Applicants respectfully assert that the

Office Action fails to establish a *prima facie* case of obviousness with regard to at least independent claims 5 and 8.

In addition, Applicants respectfully assert that the structure disclosed by Paukshto et al. does not require the use of a black matrix disposed beneath the color filters of Paukshto et al. Specifically, the transflective LCD device disclosed by Paukshto et al. makes use of a single layer having both transmissive regions and reflective layers to produce light, wherein the reflective layers 608 function to reflect the ambient light 612 and block transmissive light 611 from being transmitted through the liquid crystal layer 613. Similarly, the transmissive regions disposed between the reflective layers 608 allow the transmission of the transmissive light 611 through the liquid crystal layer 613 and prevent any reflection of the ambient light 612. Accordingly, Applicants respectfully assert that one of ordinary skill in the art would find it completely unnecessary to incorporate the use of a black matrix for "preventing the light leakage between pixels or preventing the mixing colors between color filters" since the transmissive regions and reflective layers function to prevent light leakage or mixing of adjacent color filter regions. Thus, one of ordinary skill in the art would not look to Makino for modifying the LCD structure of Paukshto et al. Therefore, Applicants respectfully assert that the Office Action fails to establish a *prima facie* case of obviousness with regard to at least independent claims 5 and 8.

Second, Applicants respectfully assert that the structure taught by Makino, specifically the structure shown in FIG. 1 of Makino, includes forming a black matrix 12 *between* the color filters 11R, 11G, and 11B. Accordingly, Applicants respectfully assert that the color filters 11R, 11G, and 11B are disposed on side surfaces of the black matrix 12, and not "on an upper surface of the black matrix," as required by independent claims 5 and 8. Thus, Applicants respectfully

assert that the Office Action further fails to establish a *prima facie* case of obviousness with regard to at least independent claims 5 and 8.

Third, Applicants respectfully assert that Paukshto et al. explicitly teaches, see paragraph [0068], that incorporating the structure taught by Makino, i.e. placing the black matrix between gaps separating adjacent color filters, "exacerbates the already mentioned dependence of the maximum viewing angle for an undistorted color image on the polar angle of observation." Accordingly, Applicants respectfully assert that Paukshto et al. explicitly teaches that the black matrix and color filter structure taught by Makino is not desirable and actually contributes to the image degradation of the device of Paukshto et al. Thus, Applicants respectfully assert that the Office Action even further fails to establish a *prima facie* case of obviousness with regard to at least independent claims 5 and 8.

For at least the above reasons, Applicants respectfully further assert that Paukshto et al. and Makino fail to establish a *prima facie* case of obviousness with regard to amended independent claims 5 and 8, and hence dependent claims 6, 7, and 9-11. Thus, Applicants respectfully request that the rejection of claims 5-11 under 35 U.S.C. § 103(a) as being unpatentable over Paukshto et al. in view of Makino be withdrawn.

With regard to the rejection of claims 12 and 14-17 under 35 U.S.C. § 103(a) as being unpatentable over Paukshto et al. in view of Jones et al., Applicants respectfully traverse this rejection for the following reasons.

Independent claim 12 recites a liquid crystal display device including, in part, "a color filter substrate having a black matrix." Similarly, independent claim 15 recites a liquid crystal display device including, in part, "a second substrate including a common electrode, a color filter film, and a black matrix."

The Office Action acknowledges that Paukshto et al. "lacks disclosure of a color filter substrate having a black matrix." Accordingly, the Office Action relies upon Jones et al. for allegedly demonstrating the well known practice of forming a black matrix on a transparent substrate and forming a color filter on an upper surface of the black matrix for "preventing the light leakage between pixels or preventing the mixing colors between color filters." Thus, the Office Action concludes that it would have been obvious to combine the teachings of Jones et al. with the disclosure of Paukshto et al. "for the benefit of preventing the light leakage between pixels or preventing the mixing colors between color filters." Applicants respectfully disagree.

First, Applicants respectfully assert that the structure disclosed by Paukshto et al. does not require the use of a black matrix disposed beneath the color filters of Paukshto et al. Specifically, the transflective LCD device disclosed by Paukshto et al. makes use of a single layer having both transmissive regions and reflective layers to produce light, wherein the reflective layers 608 function to reflect the ambient light 612 and block transmissive light 611 from being transmitted through the liquid crystal layer 613. Similarly, the transmissive regions disposed between the reflective layers 608 allow the transmission of the transmissive light 611 through the liquid crystal layer 613 and prevent any reflection of the ambient light 612. Accordingly, Applicants respectfully assert that one of ordinary skill in the art would find it completely unnecessary to incorporate the use of a black matrix for "preventing the light leakage

between pixels or preventing the mixing colors between color filters" since the transmissive regions and reflective layers function to prevent light leakage or mixing of adjacent color filter regions. Thus, one of ordinary skill in the art would not look to Jones et al. for modifying the LCD structure of Paukshto et al. Therefore, Applicants respectfully assert that the Office Action fails to establish a *prima facie* case of obviousness with regard to at least independent claims 12 and 15.

Second, Applicants respectfully assert that the structure taught by Jones et al., specifically the structures shown in FIGs. 1-4 of Jones et al., includes forming a black matrix 21 *between* the color filters 23, 25, and 27. However, Applicants respectfully assert that Paukshto et al. explicitly teaches (see paragraph [0068]) that incorporating the structure taught by Jones et al., i.e. placing the black matrix between gaps separating adjacent color filters, "exacerbates the already mentioned dependence of the maximum viewing angle for an undistorted color image on the polar angle of observation." Accordingly, Applicants respectfully assert that Paukshto et al. explicitly teaches that the black matrix and color filter structure taught by Jones et al. is not desirable and actually contributes to the image degradation of the device of Paukshto et al. Thus, Applicants respectfully assert that the Office Action further fails to establish a *prima facie* case of obviousness with regard to at least independent claims 12 and 15.

For at least the above reasons, Applicants respectfully assert that Paukshto et al. and Jones et al. fail to establish a *prima facie* case of obviousness with regard to independent claims 12 and 15, and hence dependent claims 13, 14, 16, and 17. Thus, Applicants respectfully request that the rejection of claims 12 and 14-17 under 35 U.S.C. § 103(a) as being unpatentable over Paukshto et al. in view of Jones et al. be withdrawn.

Finally, with regard to the Office Action's position that "[i]t is well known to have black matrix formed on the transparent substrate; and color filter formed on upper surface of the black matrix wherein the black matrix functioning as preventing the light leakage between pixels or preventing the mixing of colors between color filters...," Applicants respectfully submit that, as instructed in MPEP 2144.03A, "[i]t would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known," and, in part, "[i]t is never appropriate to rely solely on 'common knowledge' in the art without evidentiary support in the record, as the principle evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697." Accordingly, Applicants respectfully submit that since none of the prior art of record teaches or suggests that having "black matrix formed on the transparent substrate; and color filter formed on upper surface of the black matrix" is well known and capable of instant and unquestionable demonstration as being well-known for "the black matrix functioning as preventing the light leakage between pixels or preventing the mixing of colors between color filters," then it is not appropriate for the Examiner to take official notice or make the assertion that color filters formed on upper surfaces of a black matrix is well known.

Furthermore, as instructed by MPEP 2144.03C, "[i]f applicant adequately traverses the examiner's assertion of official notice, the examiner must provide documentary evidence in the next Office Action if the rejection is maintained. See 37 CFR 1.104(c)(2). See also *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697." Thus, Applicants respectfully submit that if the rejection is maintained, documentary evidence be provided in the next Office Action that it is well-known "to have black matrix formed on the transparent substrate; and color filter formed on upper

surface of the black matrix wherein the black matrix functioning as preventing the light leakage between pixels or preventing the mixing of colors between color filters."

With regard to the rejection of claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Paukshto et al. in view of Trapani et al. (US 2003/0002154), Applicants respectfully traverse this rejection for the following reasons.

The Office Action acknowledges that Paukshto et al. "lacks disclosure of the polarizing film include polyvinyl alcohol." Accordingly, the Office Action relies upon Trapani et al. for allegedly teaching formation of a polarizing film including polyvinyl alcohol "for the benefit of preventing degration of the polarizer in the normal working environment such as in a liquid crystal display device." Thus, the Office Action concludes that it would have been obvious "to have the polarizing film includes polyvinyl alcohol for the benefit of preventing degration of the polarizer in the normal working environment." Applicants respectfully disagree.

First, Applicants respectfully assert that the complete disclosure of paragraph [0007] recites:

> Dichroic plane polarizing films include H-type (iodine) polarizers and dyestuff polarizers. For example, an H-type polarizer is a synthetic dichroic sheet polarizer including a polyvinyl alcohol-iodine complex. Such a chemical complex is referred to as a chromophore. The base material of an H-type polarizer is a water-soluble high molecular weight substance, and the resulting film has relatively low moisture and heat resistance and tends to curl, peel or otherwise warp when exposed to ambient atmospheric conditions. Further, H-type polarizers are inherently unstable, and require protective cladding, e.g., layers of cellulose triacetate, on both sides of the polarizer to prevent degradation of the polarizer in a normal working environment such as in a liquid crystal display.

Accordingly, Applicants respectfully assert that the complete disclosure of Trapani et al. actually teaches the disadvantageous effects of forming an H-type polarizing film using a polyvinyl alcohol mixture. Specifically, Trapani et al. explicitly teaches that forming a polarizing film using a polyvinyl alcohol mixture results in a film that "has relatively low moisture and heat resistance and tends to curl, peel or otherwise warp when exposed to ambient atmospheric conditions," and that these H-type polarizers are "inherently unstable." Accordingly, Applicants respectfully assert that the Office Action fails to establish a *prima facie* case of obviousness with regard to claim 13.

For at least the above reasons, Applicants respectfully assert that the rejections under 35 U.S.C. § 103(c) should be withdrawn because none of the applied prior art of record, whether taken singly or combined, teach or suggest the combinations of features recited by independent claims 1, 3, 5, 8, 12, and 15, and hence dependent claims 2, 4, 6, 7, 9-11, 13, 14, 16, and 17.

CONCLUSION

In view of the foregoing, Applicants respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicants' undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under

37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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